

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/001276

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. ⁷: A01B 49/06, 7/00, 15/16, 15/18, 35/28; A01C 5/06, 5/08, 7/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI: IPC A01B/IC, A01C/IC and FURROW, CHANNEL etc., DISC, BLADE etc., TEETH, CASTEL etc., SIDE, OPPOSITE etc., FERTILISER, MANURE etc., SEED, SOW

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4920901 A (POUNDS) 1 May 1990 Whole document	16
Y	Whole document	1-15, 17-19
Y	US 4275671 A (BAKER) 30 June 1981 Whole document	1-15, 17-19
Y	US 5878678 A (STEPHENS et al.) 9 March 1999 Whole document	1-15, 17-19

☐ Further documents are listed in the continuation of Box C

☒ See patent family annex

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"E" earlier application or patent but published on or after the international filing date

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"O" document referring to an oral disclosure, use, exhibition or other means

"&" document member of the same patent family

"P" document published prior to the international filing date but later than the priority date claimed

Date of the actual completion of the international search
25 October 2004

Date of mailing of the international search report
2 NOV 2004

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
See Supplemental Box.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box No:

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion the International Searching Authority has found that there are different inventions as follows:

1. Claims 1 and 16 are respectively directed to an apparatus for furrow opening in soil including the features as defined, and a method for creating a seed furrow in soil using a furrow opener involving the features as defined. It is considered that *first and second discs are configured to progressively widen a furrow and that the second disc is operatively coupled to the first disc* comprises a first special technical feature.
2. Claims 2-8 are directed to an apparatus for furrow opening in soil including the features as defined. It is considered that *teeth of the first and second discs are in closer proximity at the leading edge than at the trailing edge and where the second disc is operatively coupled to the first disc* comprises a second special technical feature.
3. Claims 9-15, 17-19 directed to an apparatus for furrow opening in soil including the features as defined. It is considered that *a seeding implement having a seeding wheel including a plurality of teeth, at least one depth determining apparatus* comprises a third special technical feature.

Independent Claims 1, 16 and Claim 2 share the common features, therefore unity exists between these claims.

Independent Claims 1-2, 16 and claim 9 share the common features of an apparatus for furrow opening in soil including a first and second discs, however these features are well known from the prior art document for example US 4275671 A (BAKER) 30 June 1981, consequently the common features are not a special technical feature within the definition of the PCT rule 13.2 since they do not together make a contribution over the prior art. Therefore the inventions as defined in the above groups of claims lack unity a posteriori.

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Information on patent family members

International application No.

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
US	4920901				
US	4275671	AU	38383/78	CA	1092899
		NZ	184742		GB 2001513
US	5878678	BR	9802662	CA	2237228
		US	5970892	US	EP 0894426
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					